

REMARKS

Claims 1-53 are pending in the subject application. The Examiner has rejected these claims under 35 U.S.C. § 103(a) as being unpatentable over Middleton (WO 00/70770) in view of Chambers, IV (U.S. 5,426,779).

The above rejection is respectfully disagreed with, and is traversed below.

The present invention relates to a compressed data structure and decompression system suitable for use in portable devices. According to embodiments of the invention, the data structure includes code strings and look-up strings. Each of the look-up strings includes an index that identifies a code string, and an instruction identifying an operation to be performed on the retrieved code string. During the decompressing procedure, for each look-up string a code string is retrieved and an operation is performed on that code string according to the index and instruction of the look-up string. The output of this operation is written to an output memory for later use.

The compressed data structure may be organized as look-up data and library data. The library data includes a number of entries each being a repeated code string. The entries are organized and indexed so that the most frequently repeated words are represented with the fewest bits and the least frequently repeated words are presented with more bits. This minimizes the size of the compressed file.

Furthermore, it is possible to use buffer memory or cache in which the latest retrieved code string is written. The buffer memory is checked for each look-up string before retrieving the code string from the library data. This minimizes the required processor capacity and also increases the speed of the compression.

Accordingly, independent claim 1 is directed to a compressed data structure. The compressed data structure comprises "a plurality of strings; and a plurality of look-up strings each containing an index identifying a particular code string to be retrieved and an instruction identifying an operation to be performed on the retrieved code string."

Independent claim 7 is directed to a data processing system comprising, in part, “a plurality of code-strings; a plurality of look-up strings each containing an index identifying a particular code string and an instruction identifying an operation to be performed on the identified code string.”

Independent claim 16 is directed to a computing system comprising, in part, “a plurality of code strings stored in the first memory location; a plurality of look-up strings stored in the first memory location, each look-up string containing an index identifying a particular code string to be retrieved and an instruction identifying an operation to be performed on the retrieved code string.”

Independent claim 27 is directed to a method for decompressing a data structure having a plurality of look-up strings and a plurality of code strings comprising “reading a look-up string; retrieving a code string identified by the look-up string; and performing on the retrieved code string an operation identified by the look-up string.”

Lastly, independent claim 41 is directed to a computer program product for decompressing a data structure containing a plurality of code strings and a plurality of look-up strings. This product comprises “a machine useable medium having machine readable instructions thereon for: reading the look-up strings; for each look-up string read, retrieving a code string identified by the look-up string and performing on the retrieved code string an operation identified by that look-up string.”

Claims 2-6, 8-15, 17-26 and 28-40 and 42-53 each depend from an independent claim and recite further advantageous features of Applicants' invention.

In contrast, Middleton generally describes a compression/decompression method for compressing web pages. In this method, data of a web page is compressed for sending purposes. Middleton also describes a type a “cleaning method” that modifies specific definitions to a more simplified form requiring less space. Html- or equivalent code is searched for certain mark strings, which are replaced with further strings in order to compress the data.

As such, Middleton merely teaches replacing the “cleaned” code strings with the original ones. As the Examiner also admits in the Office Action, Middleton does not teach or suggest an index-instruction pair used to retrieve the code string and to perform the desired operation on a retrieved code string. Moreover, Middleton does not disclose or suggest cache or data structure.

The addition of Chambers, IV does not cure the shortcomings of Middleton. In particular, Chambers, IV teaches a method and system for compressing/decompressing data. The method and system of Chambers, IV relate to finding a target string and replacing it with a string that is written to a look-up table. The idea of compressing is based upon a principle in which the long strings, which are repeating in the data structure, are replaced with shorter ones and these pairs are saved. In the decompression procedure, the look-up table is used to pick up the original string for each string in the compressed data and the original one is written to the decompressed file. This procedure is well known and thus Chambers, IV focuses on a technique of finding the strings and replacing them. In particular, this reference teaches an algorithm or logic for completing the compression. Applicants respectfully assert that the forgoing does not disclose or suggest to one of ordinary skill in the art that which is set forth in the present claims.

As is evident from above, neither Middleton nor Chambers, IV teaches or suggests the index-instruction pair of the present invention. Moreover, neither Middleton nor Chambers teaches or suggests such a look-up table or look-up string that includes an instruction identifying an operation to be performed on the data to be retrieved. As such, even if one were to combine the teachings of Middleton and Chambers in the manner urged by the Examiner, which is not admitted or suggested, the claimed invention would not be disclosed or suggested to one skilled in the art.

Furthermore, Applicants respectfully point out that the present invention is also concerned with processing power and thus decreasing power consumption of a CPU. Middleton and Chambers, however, do not take power consumption of a CPU into account at all. Rather, Middleton and Chambers merely go through a whole data structure string by string and

replace a string with another string. Accordingly, Applicants respectfully assert that one skilled in the art seeking to develop that which is presently claimed would not even be motivated to look to these references for guidance, let alone combine these references and then modify their teachings. Without such a teaching, suggestion or motivation to combine and modify the teachings of the foregoing references, the invention may only be considered obvious in hindsight, which is an improper basis for rejection. Accordingly, Applicants respectfully assert that the Examiner's obviousness rejection should be reconsidered and withdrawn.

All issues raised by the Examiner having been addressed, the subject application is believed to be in condition for immediate allowance. Accordingly, the Examiner is respectfully requested to reconsider and remove the rejection of claims 1-53, and to allow all of the pending claims as currently presented for examination.

Respectfully submitted:

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